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**FORENSIC SCIENCES DIVISION – PIKESVILLE**  
**LABORATORY REPORT**  
221 Milford Mill Road  
Pikesville, MD 21208  
Phone: 443-357-1300

**TO: Frederick Police Department**

**DATE: July 27, 2021**

**ATTENTION: Det. Sean McKinney #470**

**Requestor's Case #: 21-049724**

**Laboratory File #: 2021-FSD21-06471**

**Victim: Alicia Marie Popovich**

**Suspect: Norris Bernard Ellis**

This examination has been made with the understanding that the evidence is connected with an official investigation of a criminal matter and that the Laboratory Report will be used for official purposes only related to the investigation or a subsequent criminal prosecution. This report contains the conclusions, opinions and interpretations of the examiner whose signature appears on the report. The reported results relate only to the items/exhibits tested or sampled.

**Results and Conclusions of Examination/Analysis**

The deoxyribonucleic acid (DNA) results reported below were determined by procedures which have been validated according to the Federal Bureau of Investigation's Quality Assurance Standards for Forensic DNA Testing Laboratories.

One Maryland State Police Victim Sexual Assault Evidence Collection Kit from Alicia Popovich containing exhibits: 1-11.

Exhibit 1: Control swabs (2)

Tests for the presence of blood and acid phosphatase were negative.

Exhibit 2: First vaginal swab and vaginal/cervical swabs (3)

Semen was identified. A test for the presence of blood was negative.

Exhibit 3: External genitalia swabs – *Not analyzed*

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Exhibit 4: Anal/perianal swabs – *Not analyzed*

Exhibit 5: Oral swabs (2)

Tests for the presence of blood and semen were negative.

Exhibit 6: Pubic hair combings – *Not analyzed*

Exhibit 7: Swabs from neck (2)

Blood was indicated.

Exhibit 8: Swabs from right arm – *Not analyzed*

Exhibit 9: Swabs from left arm – *Not analyzed*

Exhibit 10: Fingernail swabbings – *Not analyzed*

Exhibit 11: Known blood card standard from Alicia Popovich

Exhibit 12: Underwear – *Not analyzed*

Exhibit 13: Known oral standard from Norris Ellis

Exhibit 14: Swab from cell phone – *Not analyzed*

Exhibit 15: Swab from ring – *Not analyzed*

Exhibit 16: Swab from blue hat – *Not analyzed*

Exhibit 17: Known oral elimination standard from Lexi Caple – *Not analyzed*

**Serology Notes**

- Acid phosphatase is an enzyme found in generally high levels in semen and in relatively lower levels in a number of other bodily fluids.

Exhibits 2, 7, 11, and 13 were forwarded for DNA extraction and quantitation.

Exhibit 2 was extracted using a differential extraction process resulting in non-sperm (x1) and sperm (x2) fractions.

**Quantitation Results**

- Human and male DNA was detected in the following exhibits: 2x2, 7, and 13.
- Human DNA and a limited amount of male DNA was detected in the following exhibit: 2x1.
- Human DNA, but not male DNA, was detected in the following exhibit: 11.

The following exhibits were processed for autosomal short tandem repeat (STR) DNA analysis and were amplified and typed at twenty-four loci: 2x1, 2x2, 7, 11, and 13.



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**AUTOSOMAL STR TYPING RESULTS and CONCLUSIONS**

| Exhibit<br>Locus | [2x1]<br>First<br>vaginal &<br>vaginal/<br>cervical<br>swabs | [2x2]<br>First vaginal &<br>vaginal/<br>cervical swabs | [2x2]<br>First<br>vaginal &<br>vaginal/<br>cervical<br>swabs<br>(Foreign<br>contributor<br>Δ) | [7]<br>Neck swabs | [7]<br>Neck swabs<br>(Foreign<br>contributor Δ) | [11]<br>Alicia<br>Popovich | [13]<br>Norris Ellis |
|------------------|--|--|---|-------------------|---|----------------------------|----------------------|
| D3S1358          | 16,17  | 16,17  | 16  | 16,17             | 16  | 16,17                      | 16                   |
| vWA              | 17   | 15,17  | 15,17   | 15,17             | 15,17   | 17                         | 15,17                |
| D16S539          | 12,13  | 11,12,13   | 11,13   | 11,12,13          | 11,13   | 12,13                      | 11,13                |
| CSF1PO           | 10,11  | 8,10,11  | 8,11  | 8,10,11           | 8,11  | 10,11                      | 8,11                 |
| TPOX             | 10,11  | 10,11  | 11  | 10,11             | 11  | 10,11                      | 11                   |
| Yindel           | No Results   | 2  | 2   | 2                 | 2   | No Results                 | 2                    |
| Amelogenin       | X  | X,Y  | X,Y   | X,Y               | X,Y   | X                          | X,Y                  |
| D8S1179          | 9,14   | 9,14,15  | 14,15   | 9,14,15           | 14,15   | 9,14                       | 14,15                |
| D21S11           | 30   | 29,30,31.2   | 29,31.2   | 29,30,31.2        | 29,31.2   | 30                         | 29,31.2              |
| D18S51           | 13,14  | 12,13,14,17  | 12,17   | 12,13,14,17       | 12,17   | 13,14                      | 12,17                |
| DYS391           | No Results   | 10   | 10  | 10                | 10  | No Results                 | 10                   |
| D2S441           | 10,14  | 10,11,12,14  | 11,12   | 10,11,12,14       | 11,12   | 10,14                      | 11,12                |
| D19S433          | 15,15.2  | 13,15,15.2   | 13  | 13,15,15.2        | 13  | 15,15.2                    | 13                   |
| TH01             | 8,9  | 7,8,9  | 7   | 7,8,9             | 7   | 8,9                        | 7                    |
| FGA              | 19,23  | 19,21,22,23  | 21,22   | 19,21,22,23       | 21,22   | 19,23                      | 21,22                |
| D22S1045         | 15,16  | 14,15,16,17  | 14,17   | 14,15,16,17       | 14,17   | 15,16                      | 14,17                |
| D5S818           | 11,13  | 11,13  | 13  | 11,13             | 13  | 11,13                      | 13                   |
| D13S317          | 12   | 12,13  | 13  | 12,13             | 13  | 12                         | 13                   |
| D7S820           | 8,12   | 8,10,11,12   | 10,11   | 8,10,11,12        | 10,11   | 8,12                       | 10,11                |
| SE33             | 20   | 20   | 20  | 20                | 20  | 20                         | 20                   |
| D10S1248         | 12,14  | 12,13,14,16  | 13,16   | 12,13,14,16       | 13,16   | 12,14                      | 13,16                |
| D1S1656          | 14.3,15.3  | 14,14.3,15,15.3  | 14,15   | 14,14.3,15,15.3   | 14,15   | 14.3,15.3                  | 14,15                |
| D12S391          | 18,24  | 18,20,24   | 18,20   | 18,20,24          | 18,20   | 18,24                      | 18,20                |
| D2S1338          | 17,23  | 17,21,23,26  | 21,26   | 17,21,23,26       | 21,26   | 17,23                      | 21,26                |

Δ This DNA profile is the foreign contributor to the mixture after the contribution of Alicia Popovich has been subtracted.

**Exhibit 2x1: First vaginal swab and vaginal/cervical swabs (Non-sperm fraction)**

A DNA profile from one female contributor was obtained. The DNA profile from Alicia Popovich [11] is consistent with this DNA profile. Norris Ellis [13] is excluded from this DNA profile. No conclusions can be made concerning the source of the male DNA detected.

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MARYLAND STATE POLICE**Exhibit 2x2: First vaginal swab and vaginal/cervical swabs (Sperm fraction)****Exhibit 7: Neck swabs**

A DNA profile from one male contributor and one female contributor was obtained. Alicia Popovich [11] is expected to be present in this DNA profile and was subtracted from the mixture to obtain the foreign contributor DNA profile at all autosomal loci tested. The DNA profile from Norris Ellis [13] matches this foreign contributor DNA profile. The probabilities of selecting an unrelated individual at random having this foreign contributor DNA profile are approximately:

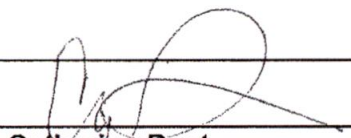
| <u>Population Database</u> | <u>Frequency</u>                            |
|----------------------------|---|
| US Caucasian               | 1 in 200 nonillion ( $200 \times 10^{30}$ ) |
| African American           | 1 in 8.9 octillion ( $8.9 \times 10^{27}$ ) |
| US Hispanic                | 1 in 400 nonillion ( $400 \times 10^{30}$ ) |

Because the rarity of this profile exceeds 1 in 333 billion, it is unreasonable to conclude that an unrelated individual would be the source of this foreign contributor DNA profile.

**Notes**

- The foreign contributor DNA profile from the sperm fraction of the first vaginal swab and vaginal/cervical swabs [2x2] has been entered into the Combined DNA Index System (CODIS) at both the State and National levels in accordance with state and national regulations where regular searches will be performed. Notification will be issued if there is a hit in the database or if the profile is removed from CODIS at any time in the future.
- Any statistics provided for autosomal STR results do not include the Amelogenin, Yindel or DYS391 loci.
- Sub-exhibit 2.1 (microscope slide) was created from the first vaginal and vaginal cervical swabs [2].
- Additional portions of all exhibits are available for independent testing and are being maintained with the evidence.
- The above exhibits/sub-exhibit of evidence will be held at the MSP Forensic Sciences Division until called for by a representative of your department.
- For evidence retention refer to Post-Conviction Law (CP 8-201).

Examiner: \_\_\_\_\_

  
Catherine Rust  
MSP Forensic Scientist II

Please arrange for prompt retrieval of evidence.

